

XIX. *The genus Hyliota, of the Coleopterous family Cucujidæ, with descriptions of new forms and a List of the described species.* By GILBERT J. ARROW, F.E.S.

[Read Nov. 6th, 1901.]

THE genera *Hyliota*, Latr. (*Brontes*, F.), and *Dendrophagus*, Schönh., have been distinguished by characters furnished by their respective European representatives, *H. planata*, L., and *D. crenatus*, Payk., two rather widely differing forms, but the confusion occasioned by the result of authors' attempts to distribute subsequently described species between the two genera shows the difficulty experienced in applying those distinctions to the species now known from all parts of the world. Indeed a glance at the various types assigned to *Hyliota* will show that several genera might be formed from these, having at least as substantial differences as those of the typical representatives of *Hyliota* and *Dendrophagus*. The recognized distinctions between the latter are found in the form of the prosternum and mesosternum, the shape of the last joint of the labial palpi and the lateral margins of the prothorax; but these characters show so many degrees of difference, and by their inconstancy seem so superficial, that, after an examination of nearly all the known species, it appears to me most natural to unite all in a single genus, which should be called *Hyliota*, that name being the oldest of the three now in use.

This course will obviate much future confusion and difficulty, for the characteristics of the genus so constituted are well-marked. The chief are the elongation of the joints of the antennæ, the large, more or less club-shaped, scape, the widely-separated anterior coxæ, the truncate prosternum and the not-lobed tarsi.

Of nine species assigned to *Dendrophagus* in Gemminger and Harold's Catalogue, three New Zealand insects have already been removed to another genus and the three names standing for North American species pronounced synonymous. Of the three remaining, one has been redescribed as a species of *Hyliota*, and the other two (inhabiting Europe and Australia respectively) are not nearly allied.

To simplify as far as possible the present involved state of the nomenclature of these insects I have drawn up a list in which I have included those known to me which are at present unnamed. Whereas the Catalogue of Gemminger and Harold enumerates in all 25 species, this list, including 12 others described since, shows only one more than that number of specifically distinct forms, to which I have added 6 hitherto undescribed.

List of the species of *Hyliota*.

<i>africana</i> , Grouv., Ann. Soc. Ent. France, 1889, p. 101, pl. 5, fig. 1	Fr. Guinea.
<i>arborea</i> , Reitt., Wien. Ent. Zeits., 1889, p. 317	Cent. Japan.
<i>atrata</i> , Grouv., Bull. Soc. Ent. France, 1890, p. 92	S. Madagascar.
<i>australis</i> (<i>Dendrophagus</i>), Erichs., Wieg. Arch., 1842, p. 218.	Australia.
<i>bicolor</i> , Arrow	Tasmania, etc.
<i>brevicollis</i> , Arrow	N. Madagascar.
<i>capito</i> , Pascoe, Ann. and Mag. Nat. Hist., 1876, (4) xvii, p. 49	New Zealand.
<i>picturatus</i> (<i>Parabrontes</i>), Reitt., Verh. Ver. Brunn., xviii, p. 176.	
<i>chilensis</i> , Blanch., Gay's Hist. Chil., v, p. 443, pl. 26, fig. 11	Chili.
<i>cinnamomea</i> , Fairm., Ann. Soc. Ent. France, 1868, p. 781	N. Madagascar.
<i>costicollis</i> , Reitt., Coleopt. Hefte, 1876, xv, p. 44	Lower Burma.
<i>crenata</i> , Payk., Faun. Suec., ii, p. 168	Europe.
<i>debilis</i> , Casey, Trans. Amer. Ent. Soc., 1884 (? Lec., Proc. Ac. Phil., 1854, p. 76)	N. America.
<i>dubia</i> , F., Syst. Eleut., ii, p. 97	N. America.
<i>truncata</i> , Motsch., Bull. Mosc., 1845, i, p. 92.	
<i>denticulata</i> , Smith, Col. Brit. Mus., i, p. 14.	
<i>fallax</i> , Grouv., Ann. Mus. Genova, 1892, p. 859	Lower Burma.
<i>fea</i> , Grouv., l. c., p. 858	Burma, etc.
<i>glabra</i> , Lec., Agass. Lake Super., p. 223	Canada.
<i>cygnæi</i> , Mann., Bull. Mosc., 1846, ii, p. 515.	
<i>v. americana</i> , Mann., <i>ibid.</i> , 1853, iii, p. 207.	
<i>gracilicornis</i> , Arrow	Malay Pen., etc.
<i>indica</i> , Arrow	S.W. India.
<i>integricollis</i> , Fairm., Col. Chil., 1860, p. 5	Chili.
<i>longicornis</i> , Reitt., Wien. Ent. Zeits., 1889, p. 316	Cent. Japan.

<i>lucia</i> , Pascoe, Journ. of Entom., 1862, p. 321	Australia.
<i>nigricans</i> , Pascoe, l. c.	
<i>australis</i> (<i>Brontes</i>), Erichs., Wieg. Arch., 1842, p. 217.	
<i>macleayi</i> , Olliff, Linn. Soc. N. S. Wales, 1885, p. 218.	Australia.
<i>militaris</i> , Erichs., Wieg. Arch., 1842, p. 217	Australia.
[<i>minimus</i> , F., Syst. El., ii, p. 98.]	
<i>pallida</i> , Arrow	S. Madagascar.
<i>planata</i> , L., Faun. Suec., No. 645	Europe.
? <i>humeralis</i> , Fald., Fauna Transcauc., ii, p. 259.	
<i>puberula</i> , Reitt., Stett. Ent. Zeits., 1878, p. 316	? Malay Penins.
<i>quadraticollis</i> , Fairm., Ann. Soc. Ent. France, 1868, p. 781	Madagascar.
<i>serrata</i> , Smith, Col. Mus. Brit., i, p. 12	Phil. Islands.
<i>conformis</i> , Grouv., Bull. Soc. Ent. France, 1896, p. 199.	
<i>serricollis</i> , Cand., Mém. Soc. R. Liège, 1861, p. 443	Ceylon.
<i>ceylonicus</i> , Motsch., Bull. Mosc., 1863, ii, p. 500.	
<i>siamensis</i> , Arrow	Siam.
<i>spinicollis</i> , Guér., Icon. Règn. Anim., Ins., p. 205, pl. 42, fig. 3	E. Indies.
<i>atrata</i> , Reitt., Mitth. Munch. Ent. Ver., 1877, p. 24.	
<i>truncatipennis</i> , Hell., Abh. Dresd. Mus., vii, 3, p. 26	Celebes.

The type of the genus is *H. planata*, L., an insect which seems to be well distributed over Europe; but Reitter's opinion as to its identity with *H. humeralis*, Fald., from the Caucasus, has not yet been confirmed. Closely related to it is the North American *H. dubia*, F. Captain Casey mentions the Southern States of North America as the habitat of this, and *H. debilis*, Lec., as the representative of it in the North-Eastern States. The latter however was described by Leconte from a southern state, Georgia, while Gemminger's catalogue strangely attributes it to California. A specimen in the British Museum from Pennsylvania seems to represent the form described by Casey, while there are examples of *H. dubia* from British Columbia and Lake Erie. Although Captain Casey appears to have had access to Leconte's collection, I cannot satisfy myself as to the identity of his *H. debilis* with

that originally described by Dr. Leconte, for besides the want of agreement in habitat there is a discrepancy in the characters mentioned by the two authors, especially those peculiar to the male.

H. denticulata, Smith, is identical with *H. dubia*, F., a label marked N. H. borne by the type specimen evidently having been interpreted by Smith as signifying "New Holland." There are other specimens, however, in the Museum, obviously belonging to the same collection and which have certainly come from the United States.

H. serrata (*Dendrophagus serratus*), Smith, a Philippine species, has been redescribed by M. Grouvelle as *H. conformis*; and the Ceylon representative of the genus has also been twice described, first by Candèze as *Brontes serricollis* and two years later by Motschulsky as *B. ceylonicus*. The later description contains a strange mistake, the dimensions being given as length $\frac{5}{8}$ line, and breadth $\frac{2}{3}$ line. Such a proportion for any insect of *Brontes*-type, described moreover as "*elongatus*," is evidently wrong. The breadth stated is that of *H. serricollis*, and the other figures are no doubt the result of a slip.

Brontes lucius and *nigricans*, of Pascoe, have been pronounced by Olliff, with some hesitation, to be one species. A comparison of the types leaves no doubt whatever upon this point. Erichson's description of *Brontes australis* also applies exactly to this species, and although Olliff has separated them in his catalogue of the Cucujidæ of Australia I have no doubt of their identity. It is noticeable that Pascoe has compared *H. lucia* and *nigricans* with the dissimilar *H. militaris*, Erichs., but omitted any comparison with *H. australis*, Erichs., although described upon the same page. *H. lucia* appears to be common in Tasmania, and it appears to me most probable that Olliff has given Erichson's name to an undescribed Tasmanian species, possibly that to which I have given the name of *H. bicolor* on a later page. Erichson has applied the name *australis* to two species, placing one in *Dendrophagus* and one in *Brontes*. I have therefore used the name *lucia* for the latter, retaining Erichson's name for the other.

Hyliota atrata, Reitt., being the same as *H. spinicollis*, Guér., as I have been able to ascertain from a typical specimen in M. René Oberthür's collection, the Madagascar species given the same name subsequently by M. Grouvelle may be allowed perhaps to retain it.

Brontes minimus, F., appears to have remained unrecognized, but there is every reason to believe that at least it does not belong to our genus.

Dendrophagus capito, Pasc., has been redescribed by Reitter as *Parabrontes picturatus* from a specimen sent by Mr. R. Helms which appears to have been a female. There is in the British Museum a similar female, received from the same collector, with which I have been able to compare Pascoe's type, which is a male. There is a considerable difference between the sexes in the length of the antennæ, their shortness in the female having no doubt led Reitter to mistake the affinities of the species. There is no close relationship between *Hyliota* and *Cryptamorphia* (*Parabrontes*, Redt.), and a glance at the tarsi of *H. capito* will show at once that it has nothing to do with the latter.

It is interesting to be able to record the existence of a species of this genus in Mexico. Although representatives have long been known in both North and South America, none has hitherto been found in the intervening region, but a single specimen in M. Oberthür's collection from that country is in certain respects intermediate between the dissimilar forms north and south of it.

The very remarkable species, *Hyliota fææ*, Grouv., discovered in Eastern Burma, has been obtained by M. Oberthür from Bootan, so that its range is fairly extensive. Although more nearly related to *H. spinicollis* than to any other species, this insect has an appearance altogether peculiar to itself, the elytra forming a triangle, the width of which at the base is partly due to a broad upturned lateral flange. The upper surface in both insects is covered with a grey sooty substance, and the form of the head, with its small but prominent eyes, is the same, but the antennæ of *H. fææ* are not expanded and are proportionately longer than those of *H. spinicollis*.

The following are the undescribed *Hyliotæ* included in the foregoing list.

H. bicolor, sp. n.

Modice depressa, hirta, luride rufa, elytris nigris, marginibus pallidioribus; capite prothoraceque opacis, crebre et profunde punctatis, oculis magnis, tuberculo posteriore nullo; prothorace longitudine ad latitudinem æquali, tricostato, costa media lævi, marginibus antica et postica tenuiter nigris, lateribus valde arcuatis, spinosis, spina antica forte; scutello rufo, crebre punctato; elytris

piceo-nigris, striato-punctatis, humeris fere acute angulatis, dein recte attenuatis ; antennis quam corpore paulo brevioribus, articulo primo longitudine ad tres sequentes fere æquale, secundo moniliforme ; tibiis omnibus incurvatis, mediis post basin fere tuberculatis. Long. 9 mm.

Hab. TASMANIA, Hobart ; VICTORIA, Western Port Bay.

This appears to be a fairly common insect, which has inclined me to think that it may be that referred to by Olliff under the name of *australis*, Erichs. I have seen series of the species in the collections of Mm. Grouvelle and Oberthür in addition to those in the British Museum, which are all from Tasmania.

H. bicolor is a species almost exactly intermediate between *H. militaris*, Er., and *H. lucia*, Pascoe. The antennæ, however, are relatively shorter than in either, and the deep red colour of the head and thorax is also peculiar. The form and size are those of *H. lucia* and the thorax is similar although rather narrower in front. The shining elytra, angular at the shoulders, are as in *H. militaris*, but are uniformly black with the exception of the extreme margins. The legs are red, and the middle tibiæ have a slight excrescence externally, in the same position as in *H. lucia*, but scarcely so prominent.

H. gracilicornis, sp. n.

Nigro-fusca, opaca, modice depressa, prothorace longitudine ad latitudinem vix æquali, lateribus arcuatis, valde spinosis (antice præsertim), postice fortiter contractis, disco non costato ; scutello parvo ; elytris striato-punctatis, humeris angulatis, dein regulariter attenuatis ; pedibus paulo pallidioribus, femoribus vix inflatis, tibiis rectis, mediis ad basin minute tuberculatis ; antennis tenuibus, longissimis, quam corpus multo longioribus, articulo tertio quam secundo duplo longiore, quarto æquali. Long. 10 mm.

Hab. MALAY PENINSULA, Perak ; SUMATRA, Si Rambe.

This species belongs to the group of large forms commonly enveloped in a loose earthy covering, as is *H. lucia*, Pascoe. It differs from that insect by its rather more flattened form and fewer teeth at the sides of the prothorax. The disc of the latter is flat without perceptible elevations or punctures. The shoulders are more sharply angular than those of *H. lucia*, and the sides of the elytra are abruptly perpendicular, at least anteriorly. The third

and fourth joints of the antennæ are of equal length, whereas in the other species the fourth joint is about equal to the second and third together. From *H. spinicollis*, Guér., the new species differs by its non-thickened antennæ and the presence of a tubercle on the middle tibiæ.

I may note here that the species referred to by Dr. Heller in his table of the Indo-Malayan *Hyliotæ* as *denticulatus*, Smith (an insect I have already referred to *H. dubia*, Fabr.), and earlier as "*denticollis*, Sm.," is evidently *H. lucia*, Pascoe.

H. siamensis, sp. n.

Testacea, valde depressa, setis fulvis brevissimis undique vestita, capite prothoraceque grosse punctatis, medio subnitidis; illo antice longitudinaliter carinato, carinâ brevissima, inter pilorum aureorum fasciculos duos posita, oculis prominentibus; prothorace fere quadrato, lateribus subæqualiter dentatis, disco utrinque carinato; elytris extus valde carinatis, punctato-striatis, interstitiis alternatis lævissime carinatis; pedibus brevissimis simplicibus; antennarum articulo quarto ad duos præcedentes conjunctos fere æquali, tertio quam secundo duplo longiore. Long. 5.5 mm.

Hab. SIAM (Bowring).

This species is exceedingly like *H. costicollis*, Reitt., with the type of which I have been able through M. Oberthür's kindness to compare it. It is rather smaller and the head and thorax are visibly punctured and not entirely opaque, while the two strong carinæ on the disc of each elytron are only feebly indicated in this, as in *H. serricollis*, Cand., which however is much more elongate. If M. Grouvelle is right in regarding the possession of tufts of hairs upon the front of the head as a sexual character, the two specimens from which my description is compiled are males.

H. indica, sp. n.

Testacea, valde depressa, setis erectis brevissimis undique vestita; capite prothoraceque crebre punctatis, illius medio antice et postice subtiliter elevato; prothorace antice, postice et lateraliter vage impresso, quam longitudine paulo latiore, basin versus angustato, lateribus rectis, vix perspicue dentatis, dentibus duobus anticis minus minutis, disco non carinato; scutello valde transverso, crebre punctato; elytris striato-punctatis, lateraliter acute carinatis, postice

et extra carinas pilis longioribus vestitis, antennis (quam corpore, ♂ longioribus, ♀ brevioribus) articulis omnibus elongatis, secundo quam tertii dimidio longiore, quarto et sequentibus subæqualibus; pectore nudo, prosterno postice transverse strigoso, meso- et metasterno grosse punctatis, abdomine subtus pubescente, segmentis secundo, tertio et quarto medio bi-impressis. Long. 6.3 mm.

Hab. S.W. INDIA, N. Kanara (H. E. Andrewes).

This is the first species as yet described from India proper, although *H. spinicollis* and *H. fææ* have been received by M. Oberthür from Bootan. It closely resembles *H. puberula*, Reitt., and *H. fallax*, Grouv., but is larger than either and considerably larger than the first, while it has not the deep impression and tuft of hairs upon the head stated by M. Grouvelle to characterize the male of *H. fallax*. Although the relative length of the joints of the antennæ, which afford one of the most positive means of identifying these difficult species, is not described in either of those mentioned, if my identification of them is correct they are both characterized by nearly equal second and third joints, the remainder progressively increasing in length to the end. In the new species the third joint is considerably longer than the second and slightly longer than those following, which are of equal length.

H. pallida, sp. n.

Valde depressa, pallide testacea, capite prothorace antennisque rufo-flavis; capite prothoraceque crebre punctatis, hoc paulo transverso, lateribus fere rectis, lævissime crenatis, angulis anticis minute bidentatis, posticis paululo contractis, disco costis duabus lateralibus fere parallelis instructo; scutello punctato; elytris striato-punctatis, lateribus acute carinatis; antennis quam corpore longioribus, scapo gracile, recto, articulo secundo longitudine ad tertii dimidio æquali. Long. 8 mm.

Hab. S. MADAGASCAR, Fianarantsoa.

This is a species closely allied to *H. atrata*, Grouv., which was also found in the same locality, but much lighter in colour than that or any other known Madagascan form. The prothorax is rather shorter and its longitudinal costæ more pronounced and straighter. The single type specimen, found by the Rev. W. D. Cowan, is a male, and has the conspicuous, strongly-curved prolongation of the mandibles distinctive of that sex in this section of the



THE
PROCEEDINGS
OF THE
ENTOMOLOGICAL SOCIETY
OF
LONDON
FOR THE YEAR 1901.

February 6th, 1901.

The Rev. Canon FOWLER, M.A., F.L.S., President, in the Chair.

Election of a Fellow.

Mr. E. B. G. Nevinson, of 3 Tedworth Square, Chelsea, was elected a Fellow of the Society.

Appointment of Vice-Presidents.

The PRESIDENT then announced that he had appointed as VICE-PRESIDENTS, Mr. CHARLES G. BARRETT, Mr. EDWARD SAUNDERS, and Mr. GEORGE H. VERRALL.

Address to the King.

The PRESIDENT proposed that an address of condolence and congratulation should be presented by the Society to his Majesty King Edward VII. on his accession to the throne, and remarked that in 1833 when the Society was founded her Majesty the late Queen with her mother the Duchess of Kent, were the first to sign the book subscribed by Members and Fellows upon admission to the Society. The proposal was seconded by Col. SWINHÖE and carried unanimously.

Exhibitions.

The PRESIDENT exhibited a specimen of *Colias, edusa* var. *helice*, with the margins of the wings entirely dark as in the male; also a variety of *Carterocephalus palæmon*, with the hind wings dark save for one conspicuous orange spot.

Dr. T. A. CHAPMAN exhibited a large series of *Endrosæ* collected during the last few years in the Western and Central Alps, by himself, Mr. A. H. Jones, and especially by Mr. Tutt; *E. roscida*, which is a very distinct dwarf form, and from frequenting marshy flats, must live on lichens growing in such localities and not on stones as the others do; *E. irrorella*, which should be the rarest species in the Alps judging by the comparatively few specimens met with; *E. aurita*, in very great variety, including a good many specimens that are called *kuhlweni*, var. *alpestris*, none however reaching the type of *kuhlweni*, but sufficient to bring very nearly to a certainty the question whether *kuhlweni* is simply an extreme form of *aurita*. — *E. aurita* and *E. irrorella*, said Dr. CHAPMAN, are very near together, no point in their anatomy being absolutely distinctive, while the genitalia are practically identical; *E. irrorella* always looks much slighter, being lighter scaled and the hairs short and smooth. It always has a yellow patch on the mesothorax. The venation is also distinctive, yet individuals of each species approach each other completely in each of the distinctive items of the venation, but never in all of them, so far as examination of a number of specimens goes.

The specimens exhibited consisted of 24 *roscida* from two localities, 22 *irrorella* from eight localities, and 204 *aurita* from 23 localities. Except *irrorella* from England, Finmark, and the Tyrol, and a few *aurita* from the Tyrol, all were from the Western Alps of Switzerland, Italy, and France. Examples from each locality when sufficiently numerous usually have a special facies. Some, as all those from Arolla, radiate; those from Bourg St. Maurice are without radiate forms, and so on. Some are more yellow; others deeper orange; some more mixed. Elevation tends to produce radiation, but no other general conclusion as to the effect of height, latitude, or longitude seems fully justified by the specimens.